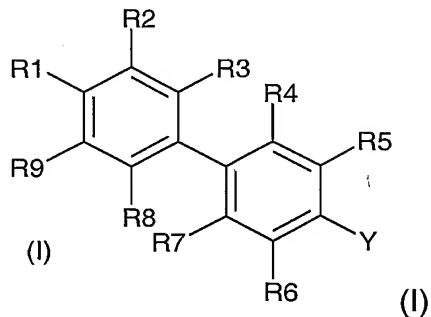


We claim:

1. A compound having the structure shown by formula I



wherein:

one of R1 and R2 is $-\text{NR17S(O)}_m\text{R12}$ and the other is selected from the group consisting of hydrogen, halogen, hydroxy, optionally substituted lower alkoxy, cyano, nitro, optionally substituted lower alkyl, optionally substituted heterocycloalkyl, optionally substituted aryl, optionally substituted heteroaryl, $-\text{NR13R14}$, optionally substituted aminosulfonyl, and optionally substituted aminocarbonyl;

R12 is selected from the group consisting of optionally substituted lower alkyl, optionally substituted aralkyl, optionally substituted heteroaralkyl, and optionally substituted heteroaryl;

R17 is selected from hydrogen and lower alkyl;

m is 1 or 2;

R3, R4, R5, R6, R7, R8, and R9 are independently selected from the group consisting of hydrogen, halogen, hydroxy, optionally substituted lower alkoxy, cyano, nitro, optionally substituted lower alkyl, optionally substituted heterocycloalkyl, optionally substituted aryl, optionally substituted heteroaryl, -NR13R14, optionally substituted aminosulfonyl, and optionally substituted

aminocarbonyl;

Y is selected from the group consisting of optionally substituted lower alkyl., halogen, trifluoromethoxy, $-S(O)_nCF_3$, $-CR15R16CF_3$, and $-C(X)CF_3$,

X is selected from the group consisting of oxygen and sulfur;

R15 and R16 taken together with the carbon to which they are attached form a saturated or unsaturated ring having 3 to 6 carbon atoms, optionally containing 1, 2, or 3 heteroatoms selected from nitrogen, sulfur, and oxygen, which ring is optionally substituted with halogen, hydroxy, optionally substituted lower alkoxy, cyano, or optionally substituted lower alkyl;

n is 0, 1, or 2;

or Y and R5, or Y and R6, taken together with the carbons to which they are attached form a 5 to 7 membered saturated or unsaturated ring optionally containing 1 to 2 heteroatoms selected from oxygen, nitrogen and sulfur, which ring is optionally substituted with halogen, hydroxy, cyano, $-NR13R14$, optionally substituted lower alkyl, or optionally substituted lower alkoxy, which ring may be aromatic or non-aromatic;

R13 and R14 are independently selected from the group consisting of hydrogen, hydroxy, optionally substituted lower alkoxy, optionally substituted lower alkyl, optionally substituted aryl, and optionally substituted heteroaryl, or R13 and R14 taken together with the nitrogen to which they are attached form a ring having 3 to 7 carbon atoms, optionally containing 1, 2, or 3 heteroatoms selected from nitrogen, sulfur, and oxygen, which ring is optionally substituted with halogen, hydroxy, cyano, optionally substituted lower alkyl, or optionally substituted lower alkoxy;

or a pharmaceutically acceptable derivative or solvate thereof.

2. A compound of claim 1 wherein R1 is -NR17S(O)₂R12.
3. A compound of claim 2 wherein R2 is selected from the group consisting of hydrogen, halogen, hydroxy, optionally substituted lower alkoxy, cyano, nitro, optionally substituted lower alkyl, and -NR13R14.
4. A compound of claim 3 wherein R2 is selected from hydrogen, halogen, hydroxy, methoxy, methyl, cyano, and -NH₂.
5. A compound of claim 4 wherein R2 is hydrogen or fluoro.
6. A compound of any of the preceding claims wherein R17 is hydrogen.
7. A compound of any of the preceding claims wherein R12 is optionally substituted lower alkyl.
8. A compound of claim 7 wherein R12 is lower alkyl.
9. A compound of claim 8 wherein R12 is methyl.
10. A compound of any of the preceding claims wherein R3, R4, R7 and R8 are independently selected from the group consisting of hydrogen, halogen, hydroxy, optionally substituted lower alkoxy, cyano, nitro, optionally substituted lower alkyl, and -NR13R14.
11. A compound of claim 10 wherein R3, R4, R7 and R8 are independently selected from hydrogen, halogen, cyano, methoxy, methyl, and -NH₂.
12. A compound of claim 11 wherein R3, R4, R7 and R8 are independently selected from hydrogen and fluoro.
13. A compound of claim 12 wherein R3, R4, R7 and R8 are hydrogen.

14. A compound of any of the preceding claims wherein R9 is selected from the group consisting of hydrogen, halogen, hydroxy, optionally substituted lower alkoxy, cyano, nitro, optionally substituted lower alkyl, and -NR13R14.
15. A compound of claim 14 wherein R9 is selected from the group consisting of hydrogen, halogen, methyl and -NH₂.
16. A compound of claim 15 wherein R9 is hydrogen or fluoro.
17. A compound of claim 16 wherein R9 is hydrogen.
18. A compound of any of the preceding claims wherein Y is halogen, trifluoromethoxy, S(O)_nCF₃, optionally substituted lower alkyl, or -CR15R16CF₃.
19. A compound of claim 18, wherein Y is fluoro, chloro, bromo, trifluoromethoxy, S(O)₂CF₃, S(O)CF₃, isobutyl, t-butyl, isopropyl, or trifluoromethyl.
20. A compound of claim 19, wherein Y is trifluoromethyl, S(O)₂CF₃, isopropyl or t-butyl.
21. A compound of any of the preceding claims wherein R5 and R6 are independently selected from the group consisting of hydrogen, halogen, hydroxy, optionally substituted lower alkoxy, cyano, nitro, optionally substituted lower alkyl, and -NR13R14.
22. A compound of claim 21 wherein R5 and R6 are independently selected from hydrogen, halogen, methyl, nitro, trifluoromethyl, and -NH₂.
23. A compound of claim 22 wherein R5 and R6 are independently selected from hydrogen and fluoro.

24. A compound of any of claims 1-17, wherein Y and R5, or Y and R6, taken together with the carbons to which they are attached form an optionally substituted 5 or 6 membered saturated or unsaturated ring containing 1 to 2 heteroatoms selected from oxygen, nitrogen and sulfur, which ring may be aromatic or non-aromatic.

25. A compound of claim 24 wherein the 5 or 6 membered ring contains 1 to 2 atoms selected from oxygen and sulfur and is substituted with one or more halogen, lower alkyl, and/or lower haloalkyl groups.

26. A compound of claim 25 wherein the ring is substituted with one or more fluoro, methyl and/or trifluoromethyl groups.

27. A compound selected from:

N-[(3-methyl-4'-trifluoromethyl)-4-biphenyl]methanesulfonamide,
N-[2,4'-bis(trifluoromethyl)-4-biphenyl]methanesulfonamide,
N-[2-methyl-4'-trifluoromethyl)-4-biphenyl]methanesulfonamide,
N-[2-fluoro-4'-trifluoromethyl)-4-biphenyl]methanesulfonamide,
N-(4'-methyl-4-biphenyl) methanesulfonamide,
N-(3,4'-dimethyl-4-biphenyl) methanesulfonamide,
N-[4'-methyl-2-(trifluoromethyl)-4-biphenyl]methanesulfonamide,
N-(2,4'-dimethyl-4-biphenyl) methanesulfonamide,
1,1,1-trifluoro-N-[4'-(trifluoromethyl)-4-biphenyl]methanesulfonamide,
N-[4'-(trifluoromethoxy)-4-biphenyl]methanesulfonamide,
N-[3-fluoro-4'-(trifluoromethyl)-4-biphenyl]methanesulfonamide,
N-[2-(hydroxymethyl)-4'-(trifluoromethyl)-4-biphenyl]methanesulfonamide,
N-[3-(hydroxymethyl)-4'-(trifluoromethyl)-4-biphenyl]methanesulfonamide,
N-[3-chloro-4'-(trifluoromethyl)-4-biphenyl]methanesulfonamide,
N-[3,5-difluoro-4'-(trifluoromethyl)-4-biphenyl]methanesulfonamide,
N-[3-nitro-4'-(trifluoromethyl)-4-biphenyl]methanesulfonamide,
N-[3-amino-4'-(trifluoromethyl)-4-biphenyl]methanesulfonamide,
N-[2'-fluoro-4'-(trifluoromethyl)-4-biphenyl]methanesulfonamide,
N-[3'-fluoro-4'-(trifluoromethyl)-4-biphenyl]-methanesulfonamide,

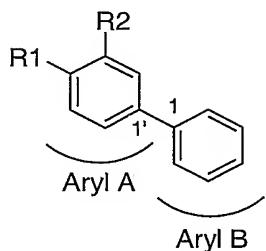
N-[2'-amino-4',5'-bis(trifluoromethyl)-4-biphenylyl]-methanesulfonamide,
N-[2'-amino-4'-(trifluoromethyl)-4-biphenylyl]-methanesulfonamide,
N-[2', 3'-difluoro-4'-(trifluoromethyl)-4-biphenylyl]-methanesulfonamide,
N-[4'-(3-(trifluoromethyl)-3H-diazirin-3-yl)-4-biphenylyl]-methanesulfonamide,
N-[4'-(trifluoromethyl)sulfonyl]-4-biphenylyl]-methanesulfonamide,
N-[4'-(3-(trifluoromethyl)-3-diaziridinyl)-4-biphenylyl]-methanesulfonamide,
N-[4'-(isopropyl)-4-biphenylyl]-methanesulfonamide,
N-[4'-(trifluoromethyl)-4-biphenylyl]-methanesulfonamide,
N-[4'-(trifluoromethyl)-4-biphenylyl]-ethanesulfonamide,
N-[4'-(trifluoromethyl)thio]-4-biphenylyl]-methanesulfonamide,
N-(4'-fluoro-4-biphenylyl)-methanesulfonamide,
N-(4'-chloro-4-biphenylyl)-methanesulfonamide,
N-(3'-fluoro-4'-methyl-4-biphenylyl)-methanesulfonamide,
N-(3-fluoro-4'-isopropyl-4-biphenylyl)-methanesulfonamide,
N-[2',3,3'-trifluoro-4'-(trifluoromethyl)-4-biphenylyl]-methanesulfonamide,
N-[2',3-difluoro-4'-(trifluoromethyl)-4-biphenylyl]-methanesulfonamide,
N-[3,3'-difluoro-4'-(trifluoromethyl)-4-biphenylyl]-methanesulfonamide,
N-[3-cyano-4'-(trifluoromethyl)-4-biphenylyl]-methanesulfonamide,
N-[4-(2,2-difluoro-1,3-benzodioxol-5-yl)phenyl]-methanesulfonamide,
N-[4-(2,2-difluoro-1,3-benzodioxol-5-yl)-2-fluorophenyl]-methanesulfonamide,
N-[2'-chloro-4'-(trifluoromethyl)-4-biphenylyl]-methanesulfonamide,
N-[2'-chloro-3-fluoro-4'-(trifluoromethyl)-4-biphenylyl]-methanesulfonamide,
N-[4'-(trifluoromethyl)-3-biphenylyl]-methanesulfonamide,
N-[3'-nitro-4'-(trifluoromethyl)-4-biphenylyl]-methanesulfonamide, and
N-[3'-amino-4'-(trifluoromethyl)-4-biphenylyl]-methanesulfonamide.

28. A composition comprising a pharmaceutically acceptable excipient and the compound or derivative or solvate thereof of any one of claims 1-27.

29. A method of modulating KSP kinesin activity or of inhibiting KSP which comprises contacting said kinesin with an effective amount of the compound or a pharmaceutically acceptable derivative or solvate thereof, or a composition according to any one of claims 1-28.

30. A method for the treatment of a disease of proliferating cells comprising administering to a subject in need thereof the compound or a pharmaceutically acceptable derivative or solvate thereof, or a composition of according to any one of claims 1-28.
31. A method according to claim 30 wherein said disease is selected from the group consisting of cancer, hyperplasias, restenosis, cardiac hypertrophy, immune disorders, fungal disorders and inflammation.

Figure/Table 1



R1	R2	Aryl A	Aryl B
NHSO ₂ Me		(3'-Me)C ₆ H ₃	4-CF ₃ -Ph
NHSO ₂ Me		(2'-CF ₃)C ₆ H ₃	4-CF ₃ -Ph
NHSO ₂ Me		(2'-Me)C ₆ H ₃	4-CF ₃ -Ph
NHSO ₂ Me		(2'-F)C ₆ H ₃	4-CF ₃ -Ph
NHSO ₂ Me		C ₆ H ₄	4-Me-Ph
NHSO ₂ Me		(3'-Me)C ₆ H ₃	4-Me-Ph
NHSO ₂ Me		(2'-CF ₃)C ₆ H ₃	4-Me-Ph
NHSO ₂ Me		(2'-Me)C ₆ H ₃	4-Me-Ph
NHSO ₂ CF ₃		C ₆ H ₄	4-CF ₃ -Ph
NHSO ₂ Me		C ₆ H ₄	4-OCF ₃ -Ph
			4-CF ₃ -Ph
NHSO ₂ Me		(3'-F)C ₆ H ₃	
NHSO ₂ Me		(2'-CH ₂ OH)C ₆ H ₃	4-CF ₃ -Ph
NHSO ₂ Me		(3'-CH ₂ OH)C ₆ H ₃	4-CF ₃ -Ph
NHSO ₂ Me		(3'-Cl)C ₆ H ₃	4-CF ₃ -Ph
NHSO ₂ Me		(3',5'-di-F)C ₆ H ₂	4-CF ₃ -Ph
NHSO ₂ Me		(3'-NO ₂)C ₆ H ₃	4-CF ₃ -Ph
NHSO ₂ Me		(3'-NH ₂)C ₆ H ₃	4-CF ₃ -Ph
NHSO ₂ Me		C ₆ H ₄	2-F-4-CF ₃ -Ph
NHSO ₂ Me		C ₆ H ₄	3-F-4-CF ₃ -Ph
NHSO ₂ Me		C ₆ H ₄	2-NH ₂ -4,5-bis-CF ₃ -Ph
NHSO ₂ Me		C ₆ H ₄	2-NH ₂ -4-CF ₃ -Ph
NHSO ₂ Me		C ₆ H ₄	2,3-di-F-4-CF ₃ -Ph
NHSO ₂ Me		C ₆ H ₄	4-(diazirine)CF ₃ -Ph
NHSO ₂ Me		C ₆ H ₄	4-SO ₂ CF ₃ -Ph
NHSO ₂ Me		C ₆ H ₄	4-(diaziridine)CF ₃ -Ph
NHSO ₂ Me		C ₆ H ₄	4-F-Ph
NHSO ₂ Me		C ₆ H ₄	4-Cl-Ph
NHSO ₂ Me		C ₆ H ₄	4-iPr-Ph
NHSO ₂ Me		C ₆ H ₄	4-SCF ₃ -Ph
NHSO ₂ Me		C ₆ H ₄	3-F-4-Me-Ph

NHSO ₂ Me		(3'-F)C ₆ H ₃	4-iPr-Ph
NHSO ₂ Me		(3'-F)C ₆ H ₃	2,3-di-F-4-CF ₃ -Ph
NHSO ₂ Me		(3'-F)C ₆ H ₃	2-F-4-CF ₃ -Ph
NHSO ₂ Me		(3'-F)C ₆ H ₃	3-F-4-CF ₃ -Ph
NHSO ₂ Me		C ₆ H ₄	3,4-(OCF ₂ O)-Ph
NHSO ₂ Me		(3'-CN)C ₆ H ₃	4-CF ₃ -Ph
NHSO ₂ Me		(3'-F)C ₆ H ₃	3,4-(OCF ₂ O)-Ph
NHSO ₂ Me		C ₆ H ₄	2-Cl-4-CF ₃ -Ph
NHSO ₂ Me		(3'-F)C ₆ H ₃	2-Cl-4-CF ₃ -Ph
NHSO ₂ Me		C ₆ H ₄	3-NO ₂ -4-CF ₃ -Ph
NHSO ₂ Me		C ₆ H ₄	3-NH ₂ -4-CF ₃ -Ph
	NHSO ₂ Me	C ₆ H ₄	4-CF ₃ -Ph
NHSO ₂ Me		C ₆ H ₄	4-CF ₃ -Ph
NHSO ₂ Et		C ₆ H ₄	4-CF ₃ -Ph